COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF APPEALS AND DISPUTE RESOLUTION

In the matter of:)	
)	OADR Docket Nos: 2019-008 through
Algonquin Gas Transmission, LLC)	2019-013Weymouth
)	
)	

REBUTTAL TESTIMONY OF GLENN KEITH

Ambient Air Monitoring Results

1. I reviewed the Pre-Filed Direct Testimony of the Petitioners and now provide the following rebuttal to portions of that testimony. Petitioners' testimony (Landrigan at paragraphs 22, 67, and 69) state that MassDEP's air monitoring showed that existing levels of certain air pollutants, in particular benzene and formaldehyde, are "highly elevated" in the Fore River area. I note that MassDEP's monitoring results showed levels that are consistent with the levels of these pollutants MassDEP has monitored at its Boston and Lynn monitoring stations and are typical of levels found in developed areas. Therefore the levels of benzene and formaldehyde at the Project Site are not "highly elevated" compared to typical background levels. For example, as shown in the Health Impact Assessment (HIA) in Figure 49 on page 90, the average benzene concentration monitored in Weymouth as part of the HIA was 0.08 $\mu g/m^3$, which is similar to the average benzene concentrations monitored in Boston and Lynn in 2017 (0.37 $\mu g/m^3$ and 0.29 $\mu g/m^3$, respectively). As shown in Figure 52 of the HIA on page 93, the average formaldehyde concentration monitored in Weymouth was 2.4 $\mu g/m^3$, which is similar to

the average formaldehyde monitored in Boston and Lynn in 2017 (2.3 $\mu g/m^3$ and 1.8 $\mu g/m^3$, respectively). The Weymouth monitoring data show that compared to levels monitored in Boston and Lynn, the levels in the Fore River area are not highly elevated. Rather, the Weymouth monitoring data confirm that levels of benzene and formaldehyde in the Fore River area are consistent with levels of these pollutants monitored in other similarly developed areas.

2. Petitioners' testimony refer to an article published on the Desmog website (Singleton at paragraph 11; article included as Singleton Exhibit 4) that infers that MassDEP could have included additional Weymouth sampling results from the Rhode Island State Health Laboratories in the HIA. The Rhode Island State Health Laboratories analyzes MassDEP's routine samples of volatile organic compounds (VOCs), using the U.S. Environmental Protection Agency's (EPA) method TO-15, taken in Boston and Lynn and reports the results quarterly to MassDEP. Part way through the Fore River HIA sampling effort, Tom McGrath, the Branch Chief overseeing MassDEP's ambient air monitoring network (now retired), decided to take samples at the Weymouth MWRA pump station site to be analyzed by the Rhode Island Laboratory as a quality control check on the HIA monitoring data. This additional monitoring was not part of the HIA scope and the additional samples were taken with the knowledge that MassDEP would not receive the sample results from the Rhode Island Laboratory until after the HIA was completed, which at that time was scheduled for early December 2018. The Rhode Island Laboratory emailed its third quarter sample results to Kathy Webber of MassDEP on December 26, 2018, which included results from four sample days in Weymouth. See third quarter sample results in Exhibit 1. Ms. Webber prepared a spreadsheet of the

Weymouth results along with the results from Boston and Lynn on the same sample days and emailed it to Mr. McGrath on January 3, 2019. Mr. McGrath emailed the spreadsheet to me on January 4, 2019 (the same day the HIA Report was published). See a copy of the email and attachment in Exhibit 2. I had no knowledge that the sample results had been received by MassDEP prior to receiving Mr. McGrath's email on January 4, 2019. The Rhode Island Laboratory emailed fourth quarter sample results to Ms. Webber on March 27, 2019, which included results from five sample days in Weymouth. See fourth quarter sample results in Exhibit 3. Ms. Webber prepared a spreadsheet of the fourth quarter Weymouth results along with the results from Boston and Lynn on the same sample days. See summary spreadsheet of fourth quarter sample results in Exhibit 4.

Exclusion of Background from Air Toxics Modelling

3. Petitioners' testimony (Landrigan at paragraph 67; Dockery at paragraphs 26-28) state that MassDEP should have required the addition of monitored background levels of air toxics in the air dispersion modeling performed by the Applicant, particularly for benzene, formaldehyde, and acrolein, and that if background levels had been included the modeling results would have shown levels above MassDEP's AALs and TELs.
4. MassDEP's AALs and TELs are not, and were never intended to be, standards that all ambient air in Massachusetts must meet. Rather, they are used in the air permitting program to ensure that a source's contribution to risk from air toxics is insignificant. As I stated in my pre-filed direct testimony in paragraph 8, and as documented in Exhibit 4 of my pre-filed direct testimony, MassDEP's long-standing practice has been to require air toxics dispersion modeling to assess the ambient concentrations caused solely by a

source's emissions, without including background levels. The modeled concentrations are then compared to AALs and TELs to determine whether there may be potentially unacceptable risks associated with the source. If modeled concentrations are below AALs and TELs, then the contribution of air toxics from the source is determined to represent an insignificant risk (i.e., de minimis risk). The MassDEP Southeast Regional Office acted appropriately and in conformance with MassDEP's long-standing practice when it did not require the Applicant to include background levels of air toxics in the modeling, whether background levels analyzed by Alpha Analytics or the Rhode Island Laboratory.

5. Petitioners' testimony (Clapp at paragraph 16; Nordgaard at paragraph 68) state that allowing additional benzene, formaldehyde and acrolein to be emitted by the proposed compressor station will contribute to additional risk of disease in the Fore River area. I note that Petitioners do not quantify such risks or locate where such risks would occur. The air dispersion modeling performed by the Applicant demonstrates that the contribution of each air pollutant to cancer risk will be insignificant (less than one in one million over 70 years) because each additional concentration will be below the respective AAL. Furthermore, as illustrated in the modeling isopleths contained in the HIA beginning on page 100 (Figures 57, 59, and 61), the highest modeled concentrations, which already are below the respective AALs, occur at the compressor station site and decrease rapidly with distance away from the site. By the time any of the pollutants reach populated areas, the concentrations would be at least 10 times lower than the respective AALs, thus contributing very low additional risk.

6. MassDEP's approach to only considering air toxics emissions from a proposed source is consistent with other state air toxics permitting programs. For example, the Rhode Island Department of Environmental Management has published regulations for air toxics permitting entitled *Air Pollution Control Regulation No. 22 - Air Toxics*[1] that also excludes consideration of background. An excerpt of these regulations is below [**bold** is emphasis added].

> 22.4 Definitions
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> A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to Part 0 of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
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> 1. "Acceptable ambient level" or "AAL" means the maximum ambient air concentration of a listed toxic air contaminant **that may be contributed by a stationary source**, at or beyond that facility's property line, as delineated in §§ 22.9 and 22.10 of this Part, averaged over the time period specified in those tables.
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> ....
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> 6. "Impact" means the ground level concentration of a pollutant resulting from emissions of that pollutant from a facility. **Impact does not include background ambient air concentrations of the pollutant or concentrations of the pollutant resulting from emissions from other facilities.**

An excerpt from Rhode Island's modeling guidance entitled *Rhode Island Air Dispersion Modeling Guidance for Stationary Sources*[2] is below.

> **3.0 AIR TOXICS MODELING OVERVIEW**
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> For a facility to obtain an air toxics operating permit (ATOP), Subsection 22.5.3 of RI APCR No. 22 requires a demonstration that emissions from the facility do not cause ground-level impacts of any toxic air contaminant in exceedance of the Acceptable Ambient Levels (AALs) listed in that regulation. New sources must make a similar demonstration for both listed and non-listed air toxics in order to obtain a preconstruction permit. The OAR develops Calculated Acceptable Ambient Levels (CAALs) for evaluating impacts of non-listed air toxics from

[1] https://rules.sos.ri.gov/regulations/part/250-120-05-22
[2] http://www.dem.ri.gov/pubs/regs/regs/air/airtoxmd.pdf

new sources in conjunction with preconstruction permit applications, as needed. **Since the AALs and CAALs refer to the increase in concentration of a pollutant associated with emissions from a local facility, background concentrations of the pollutant are not considered when evaluating compliance with those standards.**

I know of no other state that considers background levels of air toxics in their permitting programs. Furthermore, the background levels referenced by the Petitioners are not relevant to the plan approval decision at issue here.

Signed under the penalties of perjury this 7th day of May, 2019.

Glenn Keith